BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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COMMENTS OF THE AMERICAN WIND ENERGY ASSOCIATION OF CALIFORNIA ON THE 2021-22 TRANSMISSION PLANNING PROCESS

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Pursuant to the October 20, 2020 *Administrative Law Judge's Ruling Seeking Comments on Portfolios to be Used in the 2021-22 Transmission Planning Process* (Ruling), the American Wind Energy Association of California (AWEA-California)[1] respectfully offers these comments in response to the specific questions included in Section 2.1 of the ruling.

In particular, AWEA-California recommends the following modifications to the portfolios conveyed to the CAISO for the Transmission Planning Process (TPP) purposes:

1. To ensure reliability, decarbonization, and affordability, the Commission must use the 38 MMT as the starting point for scenario development going forward. Reliance on the 46 MMT by 2030 target will not provide sufficient lead-time for planning for reliability needs or decarbonization goals.
2. The Commission must provide more granularity and direction to the CAISO in the TPP scenarios to indicate the need for resource diversity, in order to ensure and enhance reliability and affordability without compromising the State's progress toward SB 100 goals. To this end, AWEA-California supports the

[1] Participating companies in AWEA-California develop, own, and operate utility-scale wind, solar, storage, offshore wind, and transmission assets, with a vision for powering a clean and renewable economy in California and the West. We work to drive immediate and sustained development of new utility scale renewable energy to propel California toward a carbon-free electric future. We advocate for procurement processes and market structures that fully value and deploy the energy and capacity attributes of renewables to achieve an affordable, reliable, resilient, and carbon-free grid.

inclusion of the second policy-driven sensitivity with a focus on offshore wind and suggests additional information in responses to the questions to ensure up-to-date and comprehensive analysis. We also suggest that the CAISO build on its previous policy-driven sensitivity from the 2018-2019 TPP which looked specifically at regional resources.

3. As a general matter, the Commission must think longer-term about the infrastructure needs to facilitate delivery of a clean, affordable, and reliable portfolio of resources to Californians, and needs to accelerate and improve integration of the IRP, RA, and transmission planning efforts of the State.

I. AWEA-CA's Responses to the Ruling's Questions for Parties

1. Please comment on Attachment A, the Framework for TPP Portfolio Selection, and recommend any changes that should be made; explain your rationale.

AWEA-California appreciates the rationale for including policy-based sensitivities in its recommendations to the CAISO for the Transmission Planning Process. In particular, we highlight the importance of the function of providing a "least regrets" approach that provides a reasonable range of future scenarios. Doing so will necessitate a more holistic look at both reliability and decarbonization procurement scenarios, and incorporating realistic timelines for planning, approving, permitting, and constructing the necessary infrastructure to ensure delivery of those resources to the system.

As AWEA has suggested in previous IRP proceedings, it is critical for the Commission to convey scenarios to the CAISO that enable the CAISO to plan for resources that will likely take years to site, permit, and construct, e.g. 'long lead-time resources,' including regional wind and offshore wind, as well as the transmission upgrades and expansions necessary to serve the gigawatts of new renewable and storage capacity that will be needed in the coming decade. We

have advocated in the past for the CPUC to submit an offshore wind scenario to the CAISO for transmission planning purposes and we appreciate the CPUC's recommendation to that effect.

AWEA-CA also recognizes that policy sensitivities such as the offshore wind sensitivity recommended in this Ruling do not authorize transmission investments. Instead, the results of this sensitivity would need to feed back in to the next IRP cycle, accompanied by improved resource cost inputs for offshore wind, in order to be selected in the next RSP in 2022 and fed into the base case portfolio delivered to the CAISO for the 2022-2023 TPP.

Therefore, while we are pleased to see that the CPUC is recommending a robust assessment of transmission capacity for offshore wind, we also recommend that the Commission take steps to coordinate this offshore wind sensitivity with the planning in the current IRP cycle and portfolios associated with the reliability base case.

Specifically, we identify a misalignment between this proposed sensitivity and the near-term planning needs identified in the September 24 Scoping Ruling to this proceeding[2], in which the assigned Commissioner concluded, "While we have been planning for the retirement of Diablo Canyon for some time, as detailed in the discussion in D.19-04-040, the outages of August 2020 have highlighted ongoing concern that we have adequate resources in place to ensure system reliability when Diablo Canyon retires. For this reason, the next priority in the procurement track of this proceeding will be to focus specific analysis around the 2,280 MW of retiring capacity and the plans of the LSEs to replace it.... After evaluating the LSEs' plans, Commission staff will compile an overall assessment and gap analysis to inform a procurement order to supplement planned capacity investments."

[2] Rulemaking 20-05-003 September 24 Assigned Commissioners' Scoping Memo and Ruling.

AWEA-California has urged the Commission to issue clear procurement guidance on Diablo Canyon for several years. Planning for the replacement of Diablo Canyon should include both planning for replacement generation capacity, and planning for optimal utilization of freed up and available transmission assets, a total of 6,000 MW capacity on three 500 kV lines. The bulk system transmission capacity that will be made available with the retirement of Diablo Canyon should be made available to offshore wind. Therefore, the Commission and the CAISO should make sure there is a clear linkage between the planning track and associated procurement for Diablo Canyon replacement and the transmission analysis that will be conducted by the CAISO on offshore wind.

2. Do you recommend any changes to the proposed Base Case portfolio in Attachment B? If so, provide justification for your recommended changes.

As noted above and articulated by AWEA-California's and other parties' prior comments in this docket, a base-case reliance on the 46 MMT greenhouse gas scenario is wholly insufficient considering the State's decarbonization ambitions and comparing the IRP scenario results with the SB 100 initial results conducted by the joint energy agencies. The SB 100 report indicates the need for roughly 60,000 megawatts of new renewable and storage capacity by 2030. The Commission has done little to kick-start the procurement or to facilitate the transmission development required simply to satisfy California's near-term demand and planned retirements, let alone build the gigawatts of clean energy needed to electrify and decarbonize our transportation and buildings sectors. The recent comments by CAISO on the individual IRP filings cautions the Commission on the need to plan more aggressively in terms of both reliability and decarbonization, suggesting that a 46 MMT case will fail to provide that level of GHG reductions and that implementation of a 38 MMT portfolio will result in a resource deficiency of 3,493 MW of effective capacity by 2026. The Commission is filing to provide a

'least regrets' foundation for planning in multiple important ways. Reliance on the 46 MMT scenario will exacerbate the poor planning, insufficient capacity, and climate-induced heat-events that California and the west experienced in August and September of 2020 and will further delay approval of transmission expansion that may be required in the coming years. More aggressive procurement and transmission planning and approval is necessary.

3. Do you recommend any changes to the proposed Policy-Driven Sensitivity portfolios in Attachment B? If so, provide justification for your recommended changes.

As stated above, AWEA-CA appreciates the CPUC's recommendation of an offshore wind policy sensitivity. We agree that, in combination with the updated input data from NREL's recently published[3] cost and resource assessments, this sensitivity will provide much improved information on offshore wind for future IRP cycles, and will very likely result in substantial quantities of offshore wind being selected as part of a future reference system portfolio.

We are also pleased by the Commission's proposed direction to the CAISO to study an "outlook" scenario for offshore wind development in the North Coast that would include development of the Del Norte and Mendocino offshore wind areas. We agree with the Commission that "In order to identify a "least regrets" transmission plan for offshore wind, it will be important to ensure that transmission development to accommodate early offshore wind resources is not undersized for future offshore wind development." A primary conclusion from the Schatz Energy Research Center study of transmission options for offshore wind in the North Coast is that scale drives the cost effectiveness of transmission investments.[4] However, the optimal transmission investment from the North Coast offshore wind resource may be much

[3] https://www.nrel.gov/docs/fy21osti/77384.pdf; and https://www.nrel.gov/docs/fy21osti/77642.pdf.

[4] See Schatz Energy Research Center, "Interconnection Feasibility Study Report," available: http://schatzcenter.org/pubs/2020-OSW-R4.pdf and "Interconnection Constraints and Pathways," available: http://schatzcenter.org/pubs/2020-OSW-R8.pdf.

larger than the maximum 1.8 GW transmission solution studied in the Schatz Energy Research Center Assessment. In fact, meeting the state's decarbonization goals cost effectively requires at least 10 GW of offshore wind by 2045[5], and will most certainly require development of offshore wind in the North Coast beyond the Humboldt resource area alone. A recent report from the Business Network for Offshore Wind and Grid Strategies LLC[6] concluded that, "a centralized transmission planning process, conducted by the grid operator and accounting for all benefits as well as the scale economies of transmission, is likely to yield a more optimal transmission investment for both offshore transmission and the onshore grid upgrades necessary to integrate OSW generation," as evidenced by recent studies from the Brattle Group and NREL. The authors further recommend that grid operators and resource planning agencies should be, "(a) looking at where new generation is expected to be developed over at least a 15-year horizon, and (b) co-optimizing combined transmission and generation investment to minimize total costs for ratepayers."

On the main sensitivity portfolios, AWEA offers three primary recommendations. First, to improve the utility of this assessment and align better with Diablo Canyon replacement planning, the portfolio should force in at least 3 GW of offshore wind by 2026, rather than forcing in all 8 GW in 2030. Roughly 3 GW of offshore wind could come online by 2026 assuming there are lease auctions next year. This timing is important because offshore wind may be one of the best resources for replacing Diablo Canyon Power Plant and utilizing both the existing transmission capacity as well as the transmission capacity that will be made available upon the facility's retirement in 2025. For example, the transmission capacity available today in

[5] SB 100 Draft study results.

[6] https://www.offshorewindus.org/wp-content/uploads/2020/10/Business-Network-OSW-Transmission-White-Paper-Final.pdf.

the central coast and by 2025 with the closure of Diablo Canyon is ideal for delivering offshore wind from the Central California call areas to serve load. In turn, offshore wind in the central coast is an ideal resource to help replace Diablo Canyon, given its consistent generation profile peaking in the late afternoon and evening.[7] However, as the CAISO has explained,[8] this central coast capacity cannot be held for offshore wind that isn't able to come online in time to compete with other resources for the capacity. Thus without proper planning now, and near-term policy direction, the state will miss an opportunity to optimize usage of existing transmission assets.

Second, given the proximity of the Diablo Canyon and Morro Bay areas, as well as the uncertainty regarding the final boundaries and developable area for offshore wind in the central coast ahead of a BOEM auction, we recommend that the CAISO study central coast offshore wind as a collective resource, totaling 7 GW, that could be mapped to both the Diablo Canyon and Morro Bay substations as determined by the capacity study. For example, there may be a larger offshore wind resource developed in the general vicinity of the Morro Bay call area that could utilize some capacity at Diablo Canyon, in the event the Diablo Canyon call area is not fully developed. Assessing this resource as a collective central coast resource for the purpose of transmission planning will avoid unnecessary limitations on where these resources might connect to the grid, or an underassessment of the capacity needs of this resource.

Third, we recommend that the Commission also direct the CAISO to study the proposed subsea transmission line from the Central Coast to the LA Basin as part of its evaluation of the transmission capacity availability and upgrades to facilitate the identified central coast offshore wind resources. This subsea transmission line from the central coast to the LA basin could also

[7] See https://iopscience.iop.org/article/10.1088/2515-7620/ab4ee1 and http://schatzcenter.org/pubs/2020-OSW-R2.pdf.

[8] Delphine Hou comments at SB100 Draft Results Workshop comments.

relieve some of the transmission congestion and constraints in the basin that are impeding the ability of utilities to deliver diverse renewables into that load center, thereby reducing the need for gas resources. If California and the BOEM auction process move quickly, offshore wind could replace some need for firm dispatchable capacity in the LA basin.

The above recommendation is not exclusive to the proposed offshore wind sensitivity. Indeed, the following objectives are interrelated: planning for Diablo Canyon generation capacity replacement, future use of transmission capacity currently occupied by Diablo Canyon, potential offshore wind and other clean resources in the central part of the state, and the need to deliver additional clean generation to the LA basin. These objectives should be addressed holistically such that generation and transmission planning are co-optimized, rather than through isolated study scenarios. Therefore, we recommend that the Commission and the CAISO seek to address these objectives in the planning and procurement tracks of the current IRP cycle, as well as in both policy sensitivities of the TPP.

Finally, for both the north coast "outlook" scenario, and the central CA to LA basin subsea transmission alternative, the Commission should direct the CAISO to consider the potential cost allocation of transmission investments that serve multiple generation resources at multiple interconnection points. As articulated in the Business Network for Offshore Wind Transmission White Paper,[9] the CAISO's investment in the Tehachapi transmission project as a "trunkline" network transmission asset serves as a useful example for potential cost allocation for a transmission resource with system-wide benefits.

4. Do you agree with the Resource-to-Busbar Mapping Methodology guiding principles in Attachment C? If not, explain why. Are there other principles that should be added?

[9] https://www.offshorewindus.org/wp-content/uploads/2020/10/Business-Network-OSW-Transmission-White-Paper-Final.pdf.

AWEA-California is concerned that the guiding principles proposed in Attachment C will exacerbate the existing paralysis on transmission planning due to the over-emphasis on consistency with the IRP and previous year mapping results for equivalent TPP cases. The IRP and TPP have failed to lead to meaningful transmission planning for the last several years, so AWEA-California instead suggests that the Commission approach busbar mapping in a much more open manner.

In particular, the results of the 2018-2019 TPP sensitivity on regional resources ignored a number of operational realities including delivery of renewable resources to CAISO boundaries, potential transmission capacity additions, and the capability to accommodate full capacity deliverability status resources. AWEA-California has addressed these issues in the past, noting the importance of the busbar mapping element of the IRP in determining where and whether new transmission is needed in the TPP. The previous scope of the mapping exercise looked at a 46 MMT scenario and a 30 MMT scenario comprised of Energy-Only resources. This effort was initiated prior to the direction of LSEs to submit plans to the 38 MMT GHG reduction target, and the Commission has not updated the busbar mapping process to plan for a 38 MMT target. Consequently, the findings in the busbar mapping exercise will be incomplete and hamstring the Commission's consideration of more aggressive GHG reduction requirements in the preferred system plan later this year.

Furthermore, AWEA-CA has previously stated our concerns with analyzing resources as "Energy-Only." Doing so is both unrealistic and inappropriate. From a commercial perspective, Energy-Only resources have not been of interest to Load Serving Entities that are procuring renewable resources. LSE solicitations typically require bidding renewables with their full suite of benefits, including RA and other flexibility benefits. We have clearly stated that any future

scenarios ultimately conveyed to the CAISO should recognize this reality. Our interpretation of the proposed busbar mapping criteria in Appendix C is that staff will consider commercial interest in specific projects, so we hope to see greater incorporation of fully deliverable projects in the busbar mapping process.

5. Commission staff has proposed various improvements to the March 30, 2020 version of the Methodology (in Attachment C), and alongside these, has raised "alternative options" for consideration. Should any of the alternative options replace the proposed approach, or do you have other options that should be used instead? If so, clearly specify which topic(s) you are referring to and explain your reasoning.

AWEA-California appreciates the updates to the out-of-state transmission inputs and assumptions and supports inclusion of new information from the RETI 2.0 advanced development projects. While the findings of the "Low-impact land use pathways to deep decarbonization of electricity" study are informative and illustrative of the cost and environmental benefits associated with renewable portfolios drawn from larger geographic footprints, we recommend that the staff not place too many land use limitations on the modeling exercise, so as not to overcomplicate the efforts. Proper siting and permitting decisions are important but need not overcomplicate the initial planning processes at the Commission level.

6. Do you recommend any further changes to the non-battery mapping steps in Attachment C? What changes and why?

AWEA-California has no response to this question at this time.

7. Do you recommend any further changes to the battery mapping steps in Attachment C? What changes and why?

AWEA-California has no response to this question at this time.

8. Do you recommend any changes to the Busbar Mapping Criteria & Implementation section of Attachment C? What changes and why?

AWEA-California has no response to this question at this time.

II. CONCLUSION

AWEA-California appreciates the opportunity to submit these comments and looks forward to continued participation in the Commission's efforts to achieve California's decarbonization and affordability goals.

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Respectfully submitted,

By: /s/

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